

Figure 1A

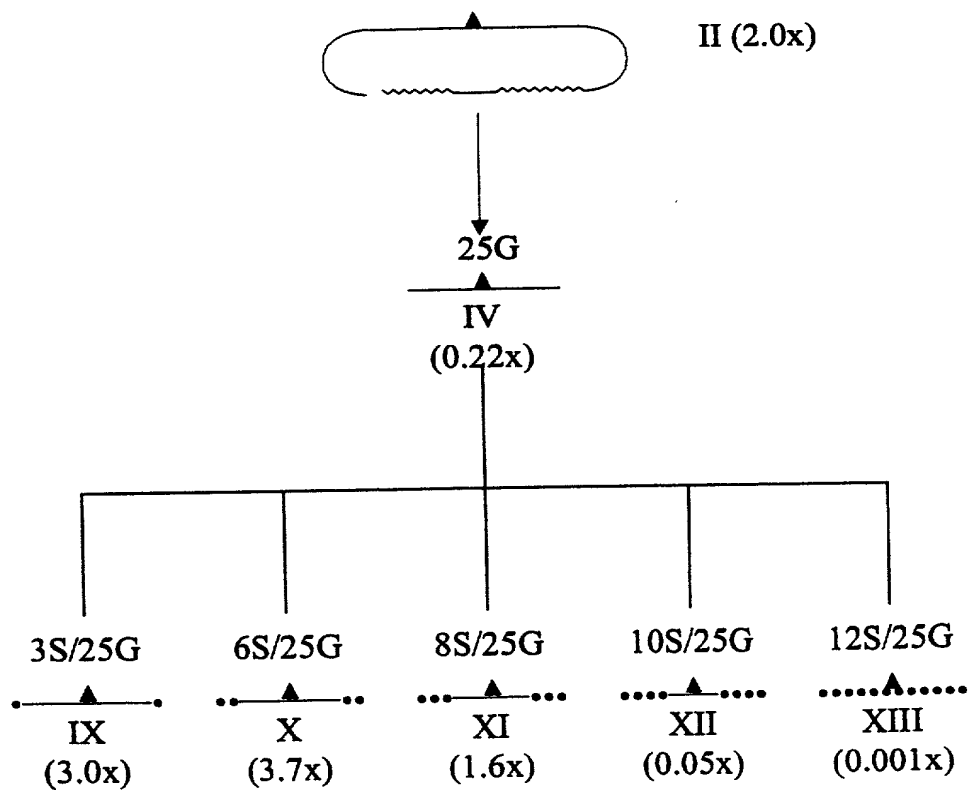


Figure 1B

# Plasmids, DNA targets and chimeric oligonucleotides

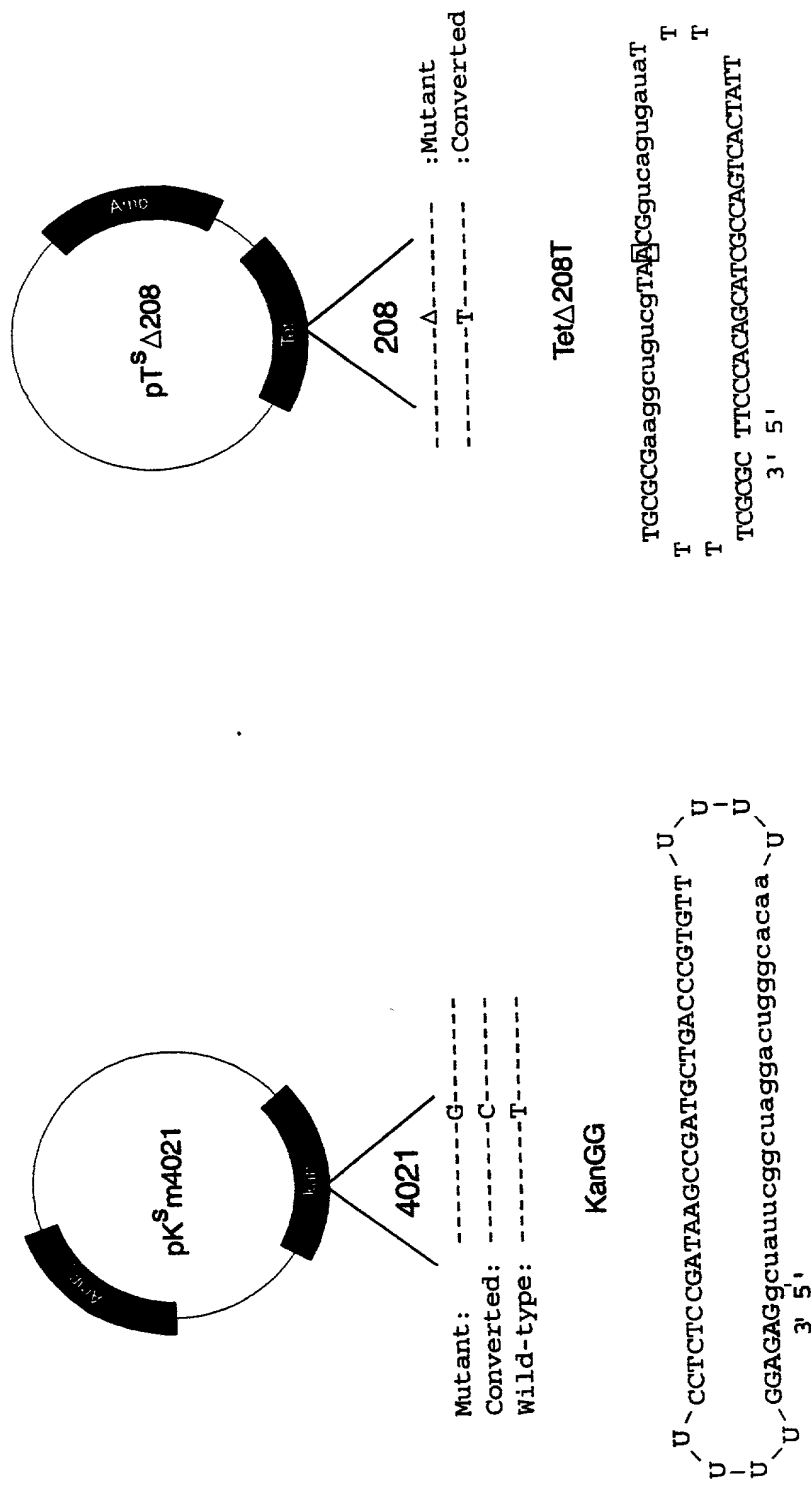


Figure 1C

Variable	1990		1995		2000		2005		2010		2015		2020		2025		2030		2035		2040		2045		2050																									
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD																								
Age	45.2	12.5	48.1	13.2	51.3	14.1	54.5	15.0	57.8	16.0	61.0	17.0	64.2	18.0	67.5	19.0	70.8	20.0	74.0	21.0	77.3	22.0	80.5	23.0	83.8	24.0	87.0	25.0	90.3	26.0	93.5	27.0	96.8	28.0	100.0	29.0														
Gender	Male	52.1	Female	47.9	Male	51.5	Female	48.5	Male	50.8	Female	49.2	Male	50.1	Female	49.9	Male	49.5	Female	50.5	Male	49.0	Female	51.0	Male	48.5	Female	51.5	Male	48.0	Female	52.0	Male	47.5	Female	52.5	Male	47.0	Female	53.0										
Ethnicity	White	65.3	Black	18.7	Hispanic	12.5	Asian	2.5	Other	0.0	White	64.8	Black	19.2	Hispanic	13.0	Asian	2.0	Other	0.0	White	64.3	Black	19.7	Hispanic	13.5	Asian	1.5	Other	0.0	White	63.8	Black	20.2	Hispanic	14.0	Asian	1.0	Other	0.0	White	63.3	Black	20.7	Hispanic	14.5	Asian	0.5	Other	0.0
Education	Less than HS	15.2	HS	35.1	Some college	25.3	Bachelor's	20.5	Master's	3.9	Less than HS	14.8	HS	35.5	Some college	25.7	Bachelor's	20.1	Master's	3.9	Less than HS	14.3	HS	35.9	Some college	26.1	Bachelor's	19.7	Master's	3.9	Less than HS	13.8	HS	36.3	Some college	26.5	Bachelor's	19.3	Master's	3.9	Less than HS	13.3	HS	36.7	Some college	26.9	Bachelor's	18.9	Master's	3.9
Income	<\$10,000	12.5	\$10,000-\$19,999	25.3	\$20,000-\$29,999	18.7	\$30,000-\$39,999	15.2	\$40,000-\$49,999	10.5	<\$10,000	11.8	\$10,000-\$19,999	26.0	\$20,000-\$29,999	19.2	\$30,000-\$39,999	14.5	\$40,000-\$49,999	9.5	<\$10,000	11.3	\$10,000-\$19,999	26.5	\$20,000-\$29,999	19.7	\$30,000-\$39,999	14.0	\$40,000-\$49,999	9.0	<\$10,000	10.8	\$10,000-\$19,999	27.0	\$20,000-\$29,999	20.2	\$30,000-\$39,999	13.5	\$40,000-\$49,999	8.5	<\$10,000	10.3	\$10,000-\$19,999	27.5	\$20,000-\$29,999	20.7	\$30,000-\$39,999	13.0	\$40,000-\$49,999	8.0
Health Status	Excellent	10.5	Very good	25.3	Good	35.1	Fair	25.3	Poor	3.9	Excellent	10.1	Very good	25.7	Good	35.5	Fair	25.7	Poor	3.9	Excellent	9.6	Very good	26.1	Good	35.9	Fair	26.1	Poor	3.9	Excellent	9.1	Very good	26.5	Good	36.3	Fair	26.5	Poor	3.9	Excellent	8.6	Very good	26.9	Good	36.7	Fair	26.9	Poor	3.9
Activity Level	Sedentary	15.2	Light	35.1	Moderate	25.3	Active	20.5	Very active	3.9	Sedentary	14.8	Light	35.5	Moderate	25.7	Active	20.1	Very active	3.9	Sedentary	14.3	Light	35.9	Moderate	26.1	Active	19.7	Very active	3.9	Sedentary	13.8	Light	36.3	Moderate	26.5	Active	19.3	Very active	3.9	Sedentary	13.3	Light	36.7	Moderate	26.9	Active	18.9	Very active	3.9
Chronic Conditions	None	10.5	1-2	25.3	3-4	35.1	5+	25.3	None	10.1	1-2	25.7	3-4	35.5	5+	25.7	None	9.6	1-2	26.1	3-4	35.9	5+	26.1	None	9.1	1-2	26.5	3-4	36.3	5+	26.5	None	8.6	1-2	26.9	3-4	36.7	5+	26.9	None	8.1	1-2	27.3	3-4	37.1	5+	27.3		
Medication Use	None	10.5	1-2</																																															

### Kan mutant sequence

3



## Kan converted sequence

## DNA SEQUENCE ANALYSES



**converted**

**converted**

Figure 1D

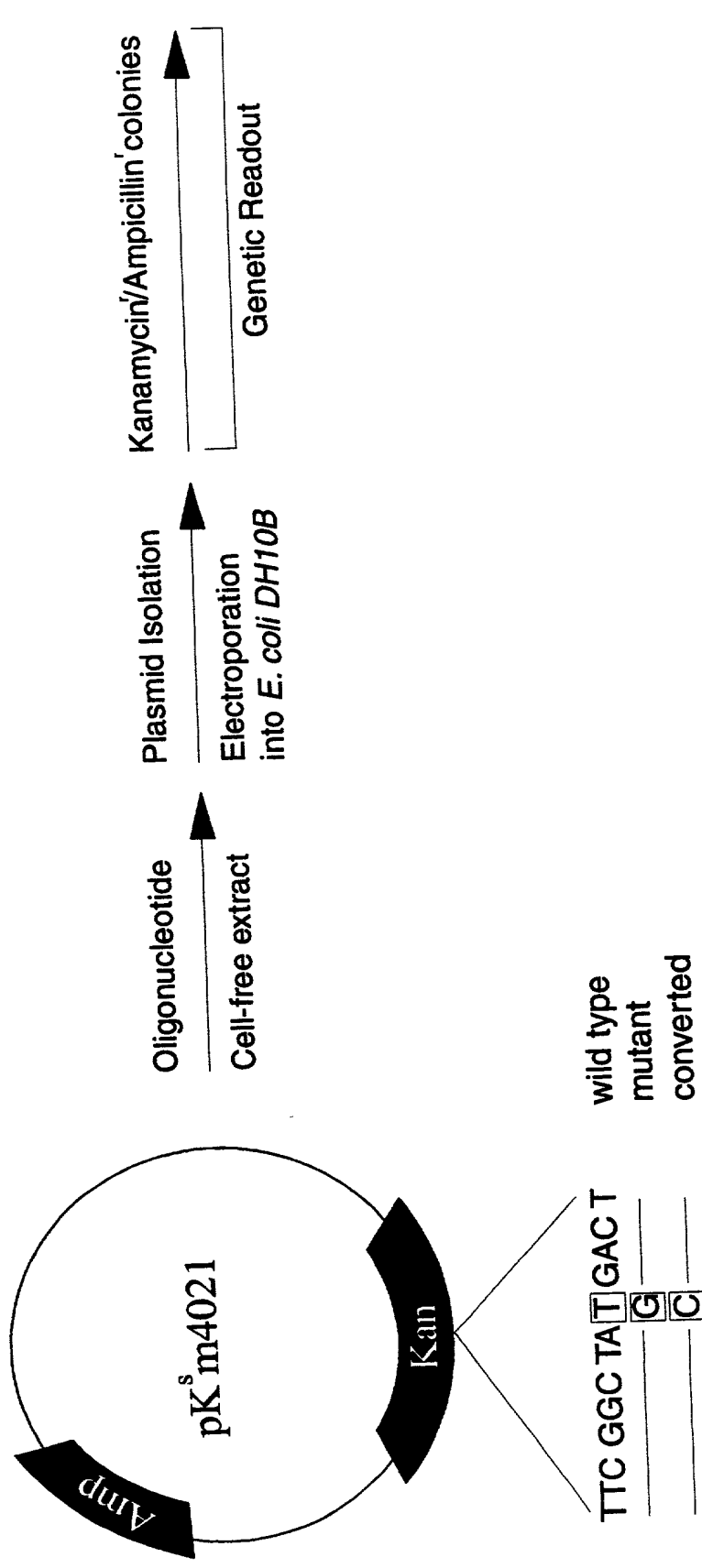
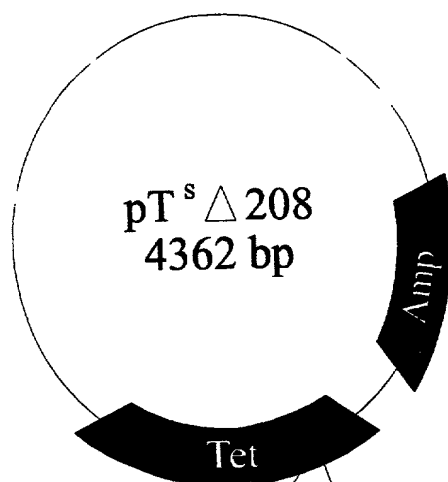


Figure 2

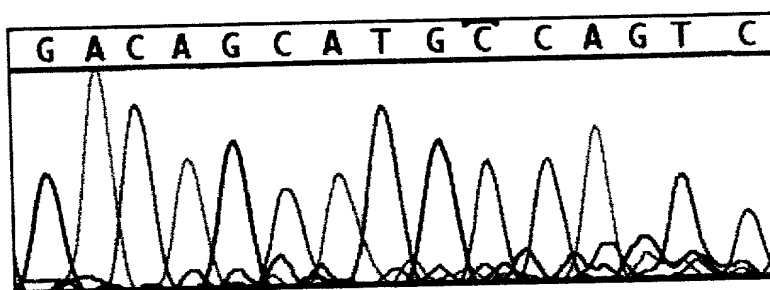


#208

Wild type: GAC AGC AT C GCCAGT  
 Mutant: GAC AGC AT - GCCAGT  
 Converted: GAC AGC AT T GCCAGT

### Sequence analysis of Tet<sup>r</sup> plasmid Δ208

Control



3S/25A

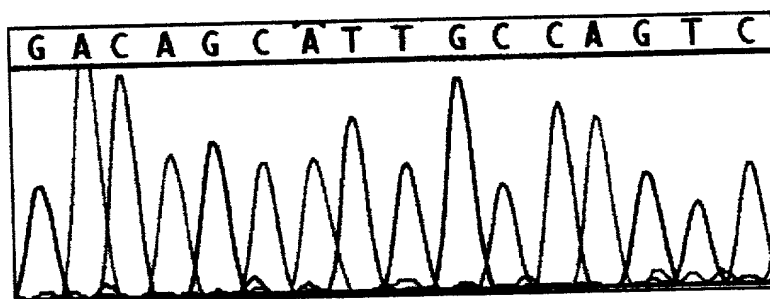
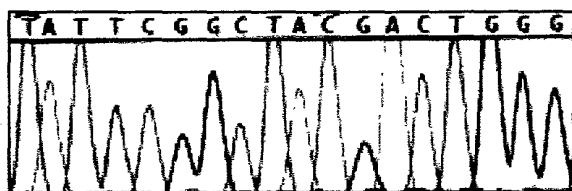


Figure 3

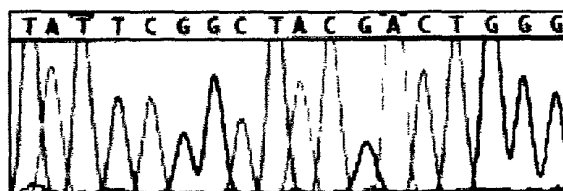
# DNA sequence analysis of Kan<sup>r</sup> plasmids

Target codon distribution					
oligomer	TAG	TAC	TAC/TAG	TGG	TCG
1) 3S/25G (20)	----	+	---	---	---
2) 6S/25G (20)	----	+	---	---	---
3) 8S/25G (20)	----	+	---	---	---
4) 10S/25G (18)	----	+	---	+(2)	+(2)
5) 25S/25G (4)	---	---	+(2)	+(2)	---

3S/25G



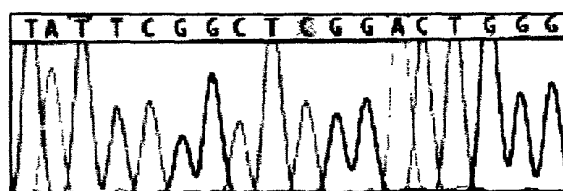
6S/25G



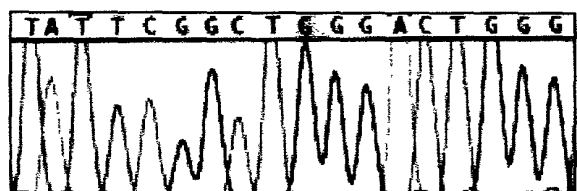
8S/25G



10S/25G



25S/25G



25S/25G

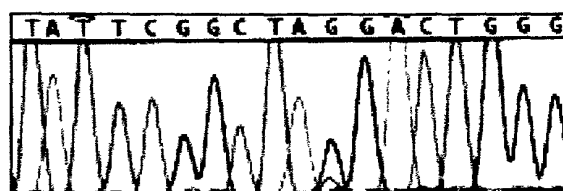


Figure 4

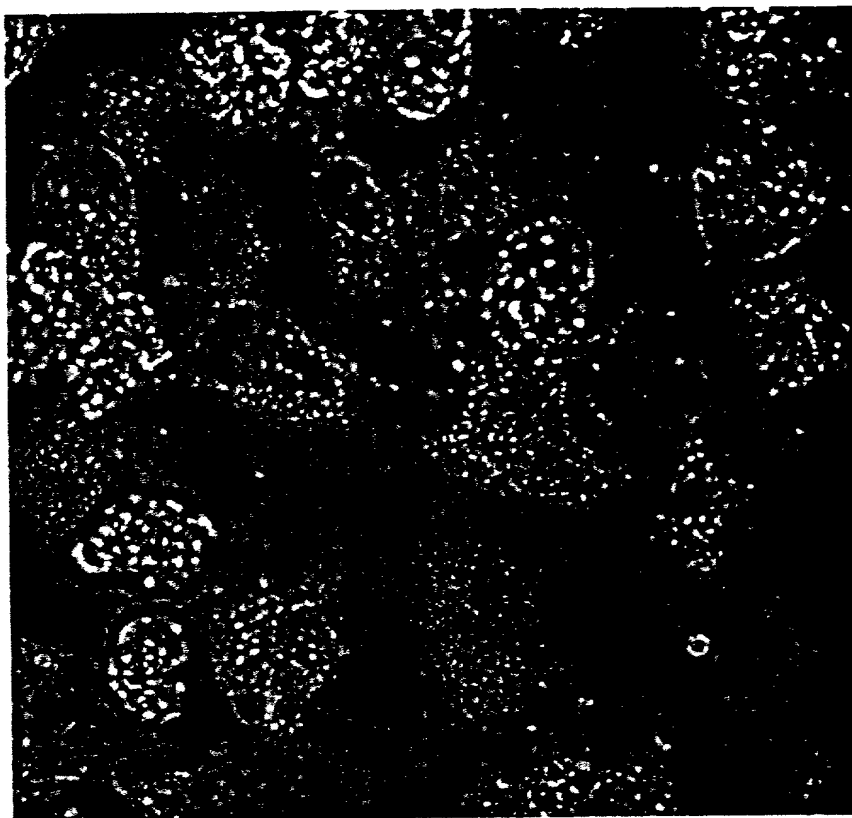


Figure 5



Figure 6



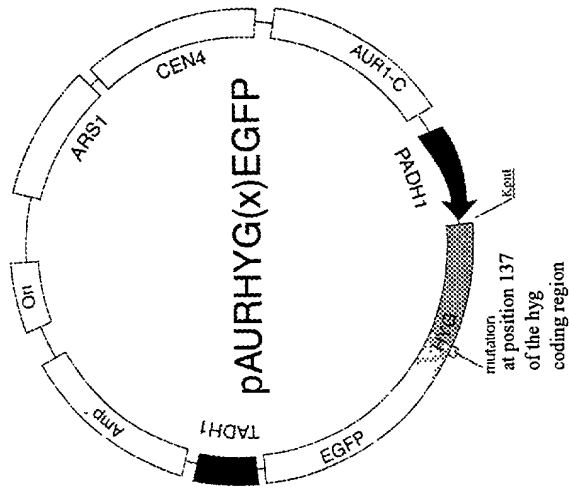


Figure 7A

Sequence of normal allele: GTGGATATGTCCT  
 Target/existing mutant: GTGGATAAATGTCCT  
 Desired alteration: GTGGATACGTCCT

Sequence of normal allele: GTGGATATGTCCT  
 Target/existing mutant: GTGGATAGGTCCT  
 Desired alteration: GTGGATACGTCCT

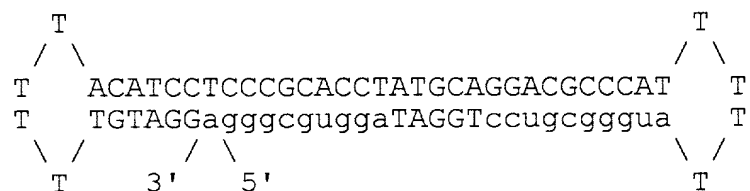
Figure 7B

HygE3T/25: 5'-AGG GCG TGG ATA CGT CCT GCG GGT A-3'

HygE3T/74: 5'-CTC GTG CTT TCA GCT TCG ATG TAG GAG GGC  
GTG GAT ACG TCC TGC GGG TAA ATA GCT GCG  
CCG ATG GTT TCT AC-3'

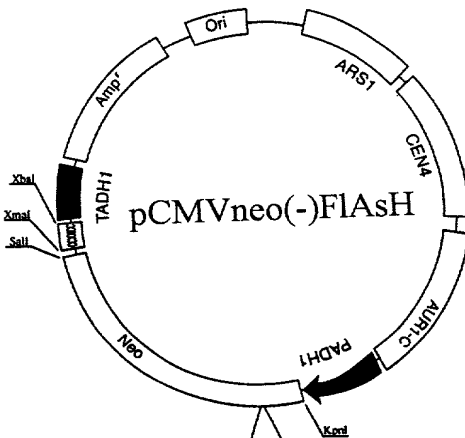
HygE3T/74α: 5'-GTA GAA ACC ATC GGC GCA GCT ATT TAC CCG  
CAG GAC GTA TCC ACG CCC TCC TAC ATC GAA  
GCT GAA AGC ACG AG-3'

HygGG/Rev:



Kan70T: 5'-CAT CAG AGC AGC CAA TTG TCT GTT GTG CCC AGT  
CGT AGC CGA ATA GCC TCT CCA CCC AAG CGG CCG GAG  
A-3'

Figure 8



TTCGGCTA G GACTGG  
AAGCCGAT C CTGACC

Neo/kan target  
mutant



TTCGGCTA C GACTGG  
AAGCCGAT G CTGACC

converted

### FUSION GENE FOR LIGAND BINDING

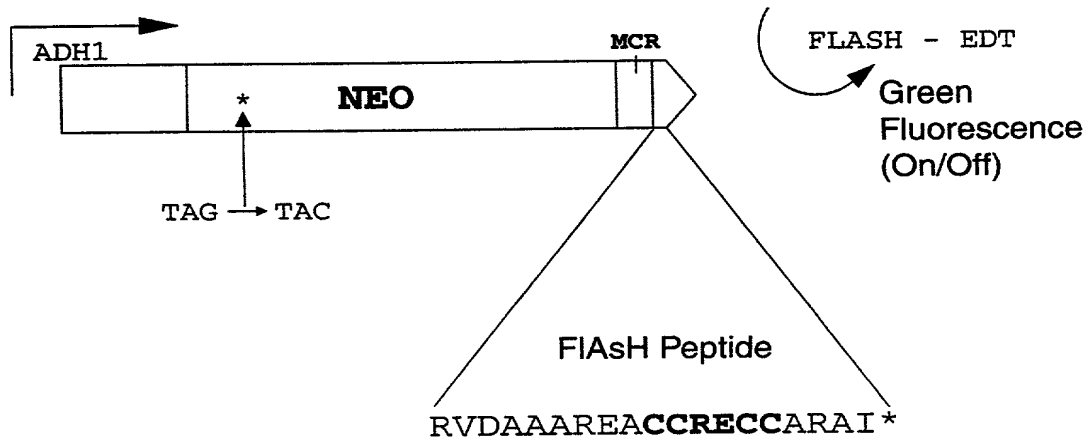


Figure 9

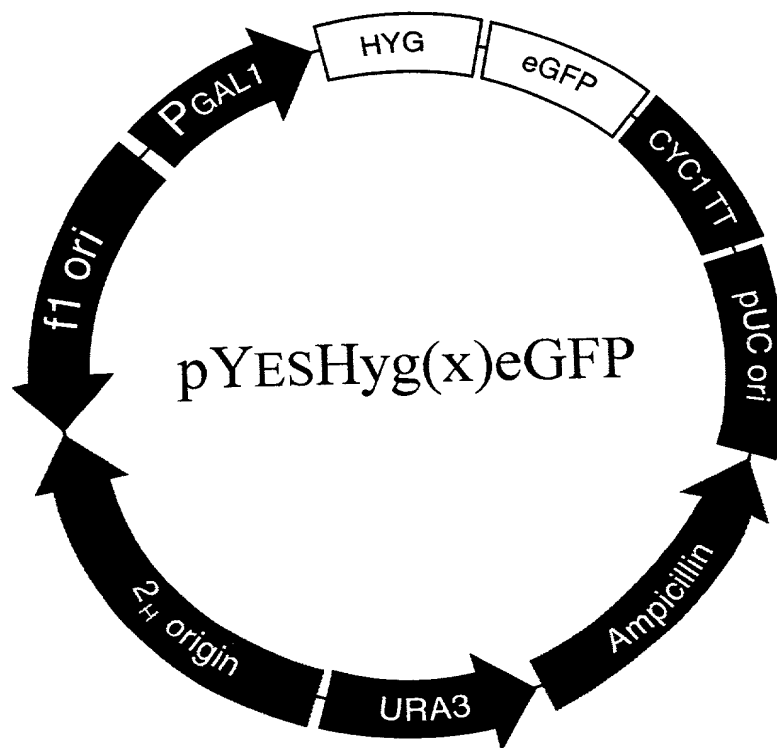


Figure 10